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ART. 1.—*An Initiatory Discourse delivered at Geneva, 27th November, 1828, before an assembly, from which was formed the Domestic Horticultural Society of the western parts of the state of N. York.* By MYRON HOLLEY, Esq.

The occurrence that led to the address before us, is one that evinces the rapid progress of our country in the refined and useful arts. Not half a century ago, in that flourishing village where the orator's voice is heard declaiming on the beauties of garden products, the howlings of wild beasts resounded in the unbroken and dark forest. Where is now assembled an intelligent audience capable of appreciating the charms of nature, there was gathered the rude and savage clan rioting in the excitement of the war dance. Where now the snow white lilly unfolds its petals and the queenly rose emits its fragrance, there were but decaying leaves and mouldering limbs of aged trees. On the green grass where now lie the golden pippin, the azure plum, and the blushing and delicious peach, there were to be seen only the acorn and beach nut.

Although the productions of the earth were the first, and are ever to be the chief, sustenance of man, yet the principles of science, as far as discovered, were applied to all his pursuits, except to those of the field. Prior to the discoveries made in chemistry, the science of matter was confined almost entirely to the length, breadth, thickness, and weight of bodies, and not to the nature of their constituents.—But now it may be truly said that the whole field of nature is laid open to the investigation and mental enjoyment of man—and the tillage of the soil elicits more deep science, and more observation, and more general acquaintance with the laws of nature, than any other pursuit of life. It is in the field and the garden, the primitive and native sphere of man, where his mental as well as his bodily powers are to acquire the greatest vigor and the most refined culture—here will be found all the fruits of useful knowledge and all the pleasures of delicate and accurate taste—and here patriotism will plant itself as firmly as do the oaks of the forest.

Having such views, we cannot but hail with pleasure, the formation of this Horticultural Society. As far as its influence extends, so far will it promote the public weal.

After referring to the virtues, enterprize and fortitude, of the settlers of the Genesee country, in proof of their descent from the venerable pilgrims of Plymouth, Mr. Holley portrays the trials and toils of converting a wilderness into a fruitful land. He then makes some interesting and classical observations on the antiquity and paradisiacal nature of Horticulture. The following extracts on the attention paid to it of a more modern date, and on the benefits of Horticultural Associations, cannot fail of being interesting to our readers:

"The taste for gardens, in modern times, has not been less universal, nor less operative. They are frequently mentioned in the history of the earliest monkish establishments, and religious houses, during the dark ages. Italy and France have been long conspicuous for their general and ostentatious Horticulture. They are more celebrated for their cultivation of delicious fruits, for their ornamental and shady walks, and their various and refreshing artificial fountains of water, than for the excellence of their culinary vegetables.

"Holland and Flanders were very early distinguished, as they still are, for their love of plants and flowers, in which they have probably excelled all the other people of Europe. Previous to the sixteenth century exotics were more cultivated there than any where else, and their gardens contained a great variety of rare plants. At that early day they carried on a considerable commerce in these articles. They imported plants from the Levant and both the Indies, and exported them to England, France and Germany.—Before the time of Henry the Eighth, the London market was supplied with culinary herbs and roots from Holland. And during many reigns afterwards the English kings obtained their gardeners from that country.

"The soil of Great Britain was considered unfit for the finest productions of Horticulture till within the last century. It was always unrivalled for the freshness and beauty of its verdure. But, it has been known only within the three or four last generations to have paid great attention to the ornamental cultivation of its pleasure grounds, or the profitable produce of its kitchen and fruit gardens. Since the general introduction of forcing houses, at the beginning of the eighteenth century, her noblemen, and other men of taste and opulence, have been wonderfully successful in the finest arts of cultivation. Now

there is said to be more certainty of finding pine apples, of domestic growth, in the London market, every day in the year, than there is either in Jamaica or Calcutta.

"The total number of vegetable species, not indigenous, in England, introduced previous to the accession of George the 4th, is said to have been 11,970; of which the first 47 were brought in before and during the reign of Henry 8th; 533 during that of Elizabeth; 578 during the reign of the two Charles', and Cromwell; 44 in that of James 2nd; 298 in that of William and Mary; 230 in that of Anne; 182 in that of George 1st; 1770 in that of George 2nd; and 6756 in that of George the 3d.

"The civilized nations of the earth are now vieing with each other in Horticultural establishments. And since the discoveries of Linneus, a new and most valuable object has been extensively connected with many of them, which has given them additional claims to intelligent favour: I allude to the promotion of Botanic science. Europe has numerous public and private gardens, in which the splendours of Horticulture are most happily combined with this enchanting pursuit.

"In our own country there have been several attempts, by individuals, and by associations, to effect the same agreeable combination. These attempts are exceedingly laudable, and, if duly encouraged, will ensure extensive and lasting benefits. They are like to be essentially aided by the United States government. For, during the last year, we were told by one of its public functionaries, that the President had much at heart the introduction into our country, from abroad, of plants of every description not already known among us, whether used as food, or for purposes connected with the arts, through the agency of our ministers, consuls, and other public agents in foreign countries. * * *

"But considering the more enlarged diffusion of wealth and freedom, in modern times, it might have been expected that associations, in aid of their rational pleasures, and beneficial uses, would have been sooner commenced and more generally adopted. It is believed that no such association existed in the world before the latter end of the last century. Though if their rise was late, it was honourable. It is certainly creditable to human nature that the first of these institutions proceeded from the exalted and liberal motives originating in the love of science.—Botanical societies paved the way for Horticultural societies, and for associations, in which the objects of both were happily united. Soon after the great northern light of the world of natural science shed its benignant beams, with peculiar brilliancy, upon botany, revealing all the recesses of that science to the admiring observation of man, societies were instituted for its promotion. Several of these exist on the continent of Europe, under the patronage of men illustrious for science and philanthropy.

"In 1805 a private association for Horticultural objects was commenced in London, which was incorporated by royal charter, in 1809. In 1803, in Edinburgh, a Florist Society was instituted, which, in 1809, enlarged its views and took the title of the Caledonian Horticultural society. At Paisley, in Scotland, a Florist society was, some time ago, established, of which an eminent writer observes, that "the rearing of beautiful flowers is found to improve the taste for manufacturing elegant patterns of fancy muslin; while the florists of Paisley have been long remarked for the peacefulness of their dispositions, and the sobriety of their manners."

"Several Botanical & Horticultural Societies have been commenced in the United States, some of which are rapidly advancing in importance and respectability. The influence of them collectively, and of their several scientific and public spirited members, individually, has been very perceptible in awakening a general desire for the improved cultivation of gardens and pleasure grounds, and an increasing love of rural pursuits. One of the most useful of these is, the New-York Horticultural Society, which was originally formed in 1818, though not incorporated till 1822. The effects of this society are most agreeably manifested in the superior quantity and quality of culinary vegetables, fruits and flowers to be found in the New-York market; in the emulation excited among actual cultivators; in the valuable practical publications, upon gardening and planting, which it has encouraged, and in the public discourses of several of its most intelligent and accomplished members. With these societies, I trust, the institution which we are now assembled to originate, will become an active and useful fellow laborer.

"The benefits of such associations are numerous and of great importance.

"They encourage profitable industry. In the vicinity of London there are occupied, as fruit and kitchen gardens, about 14,000 acres of land, of which the annual produce is sold for more than 4,000,000 dollars. Within six miles of Edinburgh, there are computed to be 500 acres, occupied in the same way, of which the annual produce is worth near 100,000 dollars. For the supply of the New-York market with vegetables, fruits and flowers, there are cultivated several thousand acres of land, of which the aggregate annual produce, in the market, is supposed to be near $400,000. The proportions of earth thus cultivated, are far more productive than any other equal portions of land in the countries where they are situated. And they give a healthy and virtuous employment to great multitudes of human beings.

"They promote important practical knowledge, by the inquiries which they stimulate, and the competition which they inspire. They lead to the institution of an immense number of more skilful and careful processes of cultivation than are previously followed, from some of which advantageous results may be reasonably anticipated. And by conversation, by writing, by public addresses, and every other method of communicating knowledge, every advantageous result will immediately be shared by the whole community.

"They create a new spirit of Horticultural and botanical enterprise. In our country, a necessary and most desirable consequence of this will be, that we shall obtain a complete acquaintance with all our indigenous vegetables. From the east and from the west, from the north and from the south, our native plants will all be gathered. Every swamp, and every valley, every plain and every mountain, which is surveyed by the American eagle, in his widest flight, will be made tributary, with all its vegetable wealth, to the great interests of science and humanity.

"The science of Horticulture is capable of great improvement, even in those countries where it has been most sedulously fostered. Recently, by the application of scientific ingenuity, better apples and pears are said to have been originated in England and Flanders, than any before known. And those countries, now vastly in advance of us in Horticulture, are making new discoveries and acquisitions from year to year. The finest fruits and plants we now cultivate; those which are essential to comfort, as well as those which minister to luxury, are not natives of our country. Our potatoes, peaches, pears, and the better kinds of plums, cherries and apples, have been all brought to us from abroad. And we are not yet in possession of a tithe of the nutritious and desirable fruits and plants with which the earth is stored. In relation to all these, inquiry and competition, suggested and aided by the combined intelligence, applause, and other rewards of public associations, will be beneficial. By these means an extensive acquaintance with the most esteemed Horticultural productions, of every country, will be obtained; and the most sagacious and persevering use of all the means necessary for their acquisition, will be adopted. Calling in the aid of men of science, of amateurs, and cultivators, both at home and abroad, such societies may become the fortunate instruments of disseminating, universally, every valuable seed, and plant, and tree, which is borne upon the prolific bosom of the earth.

"The tendencies of such associations are all liberal, and philanthropic, and social. By uniting gentlemen of all classes, professions and opinions in the prosecution of interesting and commendable objects, the amiable and elegant courtesies of life will be extended. Their stated meetings will be embellished by taste, intelligence, and festive refinement; and all will go away from them with a keener relish of the beauties of nature, and a more cheerful devotion to rural employments.

"By promoting the knowledge and the love of nature, they are calculated to improve the conduct of life, and the sympathies of the heart. The pleasures of gardening are retired, peaceful, calm. They are equally suitable to the gayety of advancing, and the gravity of declining, life. How much the pure attachment to home is strengthened, in the hearts of children, by uniting their exertions, their solicitudes, and their tastes in the various decorations of the garden! Impressions formed at home, decide the future character. And can it be that these sympathetic impressions upon the domestic affections, are not beneficial to moral conduct? Ask the sons and daughters of those who have been able to indulge their taste for ornamental shrubbery and gardening, when they are withdrawn from the paternal roof, what objects are most vividly and tenderly associated, in their minds, with those whom they most love, and you will soon learn the value of the shady walk, the bursting bud, and the fragrant arbour. One of the most pathetic passages of English poetry, is Eve's farewell to the garden of Eden.

"MUST I thus leave thee, Paradise? thus leave
Thee, native soil! these happy walks and shades,
Fit haunt of Gods? where I had hope to spend,
Quiet though sad, the respite of that day
That must be mortal to us both. O flowers,
That never will in other climate grow,
My early visitation, and my last
At even, which I bred up with tender hand
From the first op'ning bud, and gave ye names!
Who now shall rear ye to the sun, or rank
Your tribes, and water from th' ambrosial fount?
Thee, lastly, nuptial bower! by me adorn'd,
With what to sight or smell was sweet! from thee
How shall I part, and whither wander down
Into a lower world; to this obscure
And wild? How shall we breathe in other air
Less pure, accustom'd to immortal fruits?"

These extracts will, we doubt not, give our readers a very favorable idea of Mr. Holley's production. Since he has such lively and correct views of the benefits of horticulture, we regret that he so lightly touched on the importance of giving youth a taste for botanical science and horticultural practice. We should have been highly pleased to have had his thoughts on this part of the *education* of youth. The want of this taste has ever been the cause why societies for the promotion of horticulture, "were not earlier established." Not one of our youth in a thou-

sand, on finishing a common education, knows even the names of one-tenth of the plants growing in his vicinity; and of their habits and uses, he is still more ignorant. But how easy is it to set the sportive boy in quest of the first opening flowers of the field—how easy to enlarge his views of the variety and uses of the vegetable tribes—how easy to make a *herbanum* his first and most valuable property. Let parents and teachers give even but a little past time attention to this subject, and then we should soon not only "obtain a complete acquaintance with all our indigenous vegetables," but with those of value of other climes.

ART. 2.—*Circular from Rensselaer School, Troy, to the County Clerks of the State of N. York.*

We are authorized by the patron of this school, the Hon. Stephen Van Rensselaer, of Albany, to make the following communication:

He offers to furnish, gratuitously, to one gentleman from each county in the state, the requisite instruction, chemical tests and reagents, fuel, lights, use of chemical and philosophical apparatus, of a scientific library, of specimens in Natural History, and of mathematical instruments, for exercising himself *eighteen weeks* in an experimental and demonstrative course at Rensselaer School in Troy.

As the proposed course is to be *purely experimental*, the candidate must have been well instructed in literature and in the elements of the sciences. Therefore a certificate with your signature must be presented to the President, the Rev. John Chester, D. D. of Albany, or to one of the Vice Presidents, setting forth "that he is of the degree of Bachelor, or Master of Arts, or has attended one course of lectures at said schools, or that you have evidence of his having sustained a good examination in rhetoric, logic, geography, history, the theoretical principles of natural philosophy, and chemistry, and in the most important practical principles of geometry—that he is over 18 years of age, and of a good moral character. Also, that he has given satisfactory assurances of his determination to return to the county where he receives the certificate and to remain there one year or more, and to be directed by you with the advice of one or more of the judges of the county, in making exertions to introduce the practical application of said sciences to agriculture and the arts, in the academies and common and select schools of the county, provided he can receive a reasonable compensation."

Said exercise of eighteen weeks, are to commence on the third Wednesday in April, (the 15th,) 1829, and to continue nine weeks. After a recess of nine weeks, they will re-commence on the 19th of August, and continue nine weeks more. One half of the eighteen weeks will be devoted to experimental philosophy and chemistry, the other to demonstrative mineralogy, botany and zoology. The hours of amusement will be employed in practical land surveying and engineering. Notice of all the appointments ought to be directed to Mr. Van Rensselaer, at Albany, on or before first week in April.

We are farther authorized to state that Mr. V. R. proposes sending out his geological surveyors, to extend his survey to every part of the state, during the present year. The County Clerks are therefore requested to direct candidates to bring with them to the schools, specimens of all the large permanent rocks, of the clay banks, of the ores, coal, &c. which they can conveniently obtain. Such collections, with an exact account of the places from which they are taken, will save his agents much labor in preparing his proposed geological map. In this map he proposes to exhibit whatever may interest the agriculturist or tend to develope the natural resources of the state of New-York, and of the adjoining parts of N. England, New-Jersey, and Pennsylvania. The map to be upon the plan of that made under the direction of Baron de Moutbret, director of the Statistics of France.

We are farther authorized to state, that as this will complete the tenth year that Mr. V. R. has employed agents and teachers, and furnished them with apparatus, specimens, books, &c. for improving the plan of education and for investigating our mineral productions, and as his advanced age now demands repose, this must be received as his last offer, of this kind of service, to the public.

O. L. HOLLEY, 1st Vice President.
AMOS EATON, Senior Professor.
Rensselaer School, Troy, Jan. 1, 1829.

ART. 3.—*Benefits resulting from shifting Cattle from poor to rich pastures.* (From the American Farmer.)

SIR—I do not know that any writer in your paper has remarked on the astonishing effect produced by shifting cattle from lands of poor quality and short feed, to those of fertile soil and rich grasses. My experience is worth something on this point, and I wish to put it on record for the benefit of my countrymen.

In July, 1820, my farm being overstocked with sheep, I sold sixty of the poorest quality, the small, diseased ones, for *one dollar* per head, to a gentleman living about five miles from me. Our land was quite different in its quality. Mine was a thin, worn-out soil, producing nothing but rye; his was high and very rich land, covered with a thick growth of white

clover. At the next season of shearing, I took pains to be at his pen. The whole sixty sheep purchased of me had lived through the winter; their produce per head was four pounds of clean washed wool, about three times as great as that of the preceding year; and their weight (but this last was conjecture) was double to what it was when purchased of me.—He has at various times since purchased the refuse of my flock, and his example has been imitated by his neighbours in both cases with the same success. I have old worn-out ewes renovated by this shift from scanty to luxuriant pastures.

The same effects result from shifting the pasture of neat cattle and horses. In 1824, I purchased a pair of little oxen; one was eight years old, and the other his elder by six months. They were adjudged to possess a capacity for weighing when fatted—the one 700 lbs. the other 775 lbs. They were taken into my cow pastures, which, though a thin soil, were considerably better than that they had been reared on, their living having been hitherto very bad, and food meagre. I gave them my customary allowance to working oxen, and used them much in the yoke.—They never had an ear of corn, nor root from the time I purchased them till their death. I kept them two years. In the month of September, there being a scarcity of beef, I gave them some corn blades and pumpkins for six weeks, and they were sold to the butcher. One of them weighed 890, the other 976 lbs. They were not fat; one of them having but 60, the other 78 lbs. of tallow. If those who reside on the rich soils of Pennsylvania, will buy every two years, from the starved herds of New-Jersey, they will realize more profit than by any other mode of raising stock.

T. J. R.

ART. 5.—*Scuppernong Vine and Grape.—Extract of a letter from B. Blodget, Esq. to Dr. Saml. L. Mitchill, dated Raleigh, N. C. Jan. 6th, 1829.* [Communicated for the New-York Farmer and Hor. Repository.]

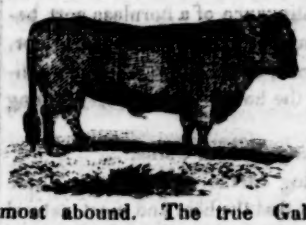
"I have recently returned from Alabama, and have collected fifty-two sorts of grapes, the sponta neous growth of our United States. Among the collection, is the Scuppernong of Washington county, in North-Carolina. Captain Wm. Burlingham offered some of the wine to taste, that was fourteen years old. He has cultivated four acres for eighteen years, and thinks the wine superior to the best Madeira or Champaigne. The vine is so prolific, that a single plant has produced him one ton of fruit, and yielded him eight barrels of wine. I intend to introduce this species of vine. It received its name from the circumstance of being first discovered near a swamp of that denomination. I intend to send you a cask."

ART. 6.—NEAT CATTLE.—*Of the varieties and breeds of the Bull.* [Continued from v. 1, p. 292.]

The Sussex and Herefordshire cattle are of a deep red color, with fine hair and very thin hides; neck and head clean, the face usually white, horns neither long nor short, rather turning up at the points; in general, they are well made in the hind quarters, wide across the hips, rump, and sirloin, but narrow in the chine, tolerably straight along the back, ribs too flat, thin in the thigh, and bone not large. An ox, six years old, when fat, will weigh from sixty to one hundred stone, the fore-quarters generally the heaviest; the oxen are mostly worked from three to six years old, sometimes till seven, when they are turned off for feeding. The Hereford cattle are next in size to the Yorkshire short horns: both this and the Gloucester variety are highly eligible as dairy stock, and the females of the Herefords have been found to fatten better at three years old than any other kind of cattle except the spayed heifers of Norfolk.

The polled or hornless Breeds.

(Fig 5.)



The most numerous and esteemed variety is the Galloway breed, (fig. 5,) so called from the county of that name, in the south-west of Scotland, where they most abound. The true Galloway bullock "is straight and broad on the back, and nearly level from the head to the rump, broad at the loins, not, however, with hooked bones, or projecting knobs, so that when viewed from above, the whole body appears beautifully rounded; he is long in the quarters, but not broad in the twist; he is deep in the chest, short in the leg, and moderately fine in the bone, clean in the chop and in the neck; his head is of a moderate size, with large rough ears, and full, but not prominent eyes or heavy eyebrows, so that he has a calm though determined look; his well proportioned form is clothed with a loose and mellow skin, adorned with long soft glossy hair." The prevailing color is black or dark brindled, and is preferred, from a belief that they are connected with superior hardiness of constitution. The Galloways are rather undersized, not very different from the size of the Devons, but as much less than the long horns, as the long horns are less than the short horns. On the best farms, the average weight of bullocks three years and a half old, when the greater part of them are driven to the south, has been stated at about forty stone, *avoirdupois*; some of them, fattened in England, have been brought to nearly one hundred stone.

The general properties of this breed are well known in almost every part of England, as well as in Scot

land. They are sometimes sent from their native pastures directly to Smithfield, a distance of four hundred miles, and sold at once to the butcher; and in spring, they are often shown in Norfolk, immediately after their arrival, in as good condition as, or even better than, when they began their journey; with full breeding, there is perhaps no breed that sooner attains maturity, and their flesh is of the finest quality. Culley was misinformed about the quantity of milk they yield, which, though rich, is by no means abundant; it is alleged not to be more than seventy or eighty years since the Galloways were all horned, and very much the same in external appearance and character, with the breed of black cattle which prevailed over the west of Scotland at that period, and which still abound in perfection, the largest sized ones in Argyleshire, and the smaller in the Isle of Skye; the Galloway cattle, at the time alluded to, were coupled with some hornless bulls, of a sort which do not seem now to be accurately known, but which were then brought from Cumberland, the effects of which crossing were thought to be the general loss of horns in the former, and the enlargement of their size: the continuance of a hornless sort being kept up by selecting only such for breeding, or, perhaps, by other means, as by the practice of eradicating with the knife, the horns in their very young state.

Of Rearing Horned Cattle.

The mode of rearing calves is various. There can be little doubt but that the best and most natural mode is that of allowing them to suck their dams, at least for some length of time after they are brought forth. The usual method in Yorkshire, and most parts of Scotland, is that of giving them milk to drink, there being few instances where they are allowed to suck. For the first two or three weeks they mostly get milk warm from the cow; but for the next two or three weeks, half the new milk is withdrawn, and skimmed milk substituted in its steed: and at the end of that period, the new milk is wholly withdrawn; they are then fed on skimmed milk alone, or sometimes mixed with water, till they are able to support themselves by eating grass, or other food of that sort.

In Cheshire, the practice is to allow the calves to suck for the first three weeks. They are then fed on warm new whey, or scalded whey and butter-milk mixed; with the green whey, water is frequently mixed, and either oat meal or wheat and bean flour added. A quart of meal or flour is thought sufficient to mix with forty or fifty quarts of liquid. Oat meal gruel and butter-milk, with an addition of skimmed milk, are also used for the same purpose. Some one of these prepared kinds of food is given night and morning for a few weeks after the calves are put on that diet, but afterwards only once a day, till they are three months old or more.

The calves in Gloucestershire, are not allowed to suck above two or three days; they are then fed on skimmed milk, which is previously heated over the fire. When they arrive at such an age as to be able to eat a little, they are allowed split beans or oats, and cut hay, and water is mixed with the milk.

In Sussex it is common to allow the calves either to suck for ten or twelve weeks, or to wean them at the end of three or four, and to give them a liberal allowance of skimmed milk for six or eight weeks longer.

In Middlesex the methods pursued for rearing calves, are either by giving them a pailful, containing about a gallon, of milk, warm from the teat of the cow, morning and evening, for eight or ten weeks; or, which is certainly the most agreeable to nature, and, therefore, to be preferred to any other that can be adopted, to allow the calf to suck its dam, as is sometimes done in the county of Sussex, and generally in Wigtonshire.

According to Marshal the best method is this: The calves suck a week or a fortnight, according to their strength (a good rule); new milk in the pail, a few meals; next, new milk and skim-milk mixed, a few meals more: then, skim-milk alone; or porridge, made with milk, water, ground oats, &c. and sometimes oil cake, until cheese making commence; after which, whey porridge, or sweet whey, in the field; being careful to house them in the night, until warm weather be confirmed. This method of suckling is not, however, free from objection, and, in the ordinary practice of rearing calves, it is held to be a preferable plan to begin at once to learn them to drink from a pail. The calf that is fed from the teat must depend upon the milk of its dam, however scanty or irregular it may be; whereas, when fed from a dish, the quantity can be regulated according to its age; and various substitutes may be resorted to, by which a great part of the milk is saved for other purposes, or a greater number of calves reared upon the same quantity. Yet it would seem to be a good practice to allow calves to suck for a few days at first, if there was no inconvenience to be apprehended both to themselves and their dams, from the separation afterwards.

When fed from the pail, the average allowance to a calf is about two English wine gallons of milk daily, for twelve or thirteen weeks; at first fresh milk as it is drawn from the cow, and afterwards skim-milk. But after it is three or four weeks old, a great variety of substitutes for milk are used in different places, of which linseed oil-cake, meal and turnips, are the most common.

Where calves are reared with skim-milk, it should

be boiled, and suffered to stand until it cools to the temperature of that first given by the cow, or a trifling degree more warm, and in that state be given to the calf. Milk is frequently given to calves warm only; but that method will not succeed so well as boiling it. If the milk be given over-cold, it will cause the calf to skit or purge. When this is the case, put two or three spoonfuls of rennet in the milk, and it will soon stop the looseness. If, on the contrary, the calf is bound, bacon-broth is a very good and safe thing to put into the milk. One gallon of milk per day will keep a calf well till it be thirteen weeks old. A calf may then be supported without milk, by giving it hay, and a little wheat-bran, once a day, with about a pint of oats. The oats will be found of great service as soon as the calf is capable of eating them. The bran and oats should be given about mid-day: the milk in portions, at eight o'clock in the morning, and four in the afternoon. But whatever hours are chosen to set apart for feeding the calf, it is best to adhere to the particular times, as regularity is of more consequence than many people think. If the calf goes but an hour or two beyond his usual time of feeding, he will find himself uneasy, and pine for food. It is always to be understood, that calves reared in this manner are to be enticed to eat hay as early as possible; and the best way of doing this is to give them the sweetest hay that can be got, and but little at a time. Turnips or potatoes are very good food, as soon as they can eat them; and they are best cut small, and mixed with the hay, oats, bran, and such articles. It may be observed, that it is not absolutely necessary to give milk to calves after they are one month old; and to wean them gradually, two quarts of milk, with the addition of linseed boiled in water to make a gruel, and given together, will answer the purpose, until, by diminishing the milk gradually, the calf will soon do entirely without. Hay-tea will answer the purpose, with the like addition of two quarts of milk; but it is not so nutritious as linseed. It is a good method of making this, to put such a proportion of hay as will be necessary into a tub, then to pour on a sufficient quantity of boiling water, covering up the vessel, and letting the water remain long enough to extract the virtues of the hay. When bacon or pork is boiled, it is a good way to preserve the liquor or broth, and mix it with milk for the calves.

In summer calves may sometimes be reared on whey only; but when reared in winter, they must be fed with hay; and clover hay is probably the best of any for this use. Calves may also be raised with porridge of different kinds, without any mixture of milk. It is sometimes a good and convenient plan, the author of the New Farmer's Calendar says, to bring up calves under a step-mother; an old cow, with a tolerable stock of milk, will suckle two calves, or more, either turned off with her, or at home, keeping them in good condition, until they are old enough to shift: they ought to suck the first of their mother's milk, for two or three days, although many are weaned without ever being suffered to suck at all.—Calves, whether rearing or fattening, should also always suck before milking, the cow being milked afterwards, as the first and thinnest of the milk is sufficiently rich. Old milk will, perhaps, scour a very young calf; but the effect will go off without any ill consequences. He observes, that the Duke of Northumberland's recipe is to take one gallon of skimmed milk, and to about a pint of it add half an ounce of common treacle, stirring it until it is well mixed; then to take one ounce of linseed oil-cake, finely pulverised, and with the hand let it fall gradually, in very small quantities, into the milk, stirring it in the meantime, with a spoon or ladle, until it be thoroughly incorporated; then let the mixture be put into the other part of the milk, and the whole be made nearly as warm as new milk, when it is first taken from the cow; and in that state it is fit for use. The quantity of oil-cake powder may, from time to time, be increased as occasion may require, and as the calf becomes inured to the flavor of it. And Crook's method is to make a jelly of one quart of linseed, boiled ten minutes in six quarts of water, which jelly is afterwards mixed with a small quantity of the best hay tea; on this he rears many calves without milk; thinks many calves are annually lost by artificial rearing, and more brought up with poor and weak constitutions.

When calves are dropped during the grass season, Donaldson observes, they should be put into some small home-close of sweet rich pasture, after that they are eight or ten days old, not only for the sake of exercise, but also that they may the sooner take to the eating of grass. When they happen to be dropped during winter, or before the return of the grass season, a little short soft hay or straw, or sliced turnips, should be laid in the trough or stall before them.

Castration is performed both on male and female calves, when neither are intended for procreation.—On cow calves, however, it is often omitted. But in Norfolk no distinction is made as to sex; males and females are equally objects of rearing, and are both occasionally subject to castration, it being a prevailing custom to spay all heifers intended to be fatted at three years old; but such as are intended to be finished at two years old, are, it is believed, pretty generally left "open;" as are, of course, those intended for the dairy. There are two reasons for this practice: they are prevented from taking the bull too early, and thereby frustrating the main intention; and by this precaution may lie more quietly, and are kept

from roving at the time of fatting. This may be one reason why spayed heifers are thought to fatten more kindly at three years old, and to be better fleshed, than open heifers.

The time of performing the operation of castration in horned cattle, as in all kinds of live stock, is while the animals are yet very young, and just so strong as to endure this severe operation, without any great danger of its proving fatal. The males, accordingly, are cut commonly when about a month old, and the females at the age of from one to three months; but in Galloway, where more heifers are *spayed* than perhaps in all the island besides, this is seldom done till they are about a year old.

The best time for rearing calves is the spring; but that operation must depend in some degree on the time when the calf was dropped. Such as are weaned during autumn or winter, however, seldom do any good. At the season when the calf is weaned from the teat, it ought to be turned abroad, in the day-time, into a small close or orchard near the yard, where there is a good bite of grass, which may be expected at the time of the year when the weaning calves are of this age; and, as there will generally be more than one calf weaned in a season, they will each be company for the other, and become in a short time reconciled to their situation. It is to be observed, that this pasture should be at some distance from that whereon the dams are turned, and that there be neither ponds nor ditches, nor any annoyance which might endanger the lives of these youthful animals; and, in order to habituate them still more to their pasture, milk pottage should be carried to them at each of their feeding hours. For the first month or six weeks, the calves ought every night to be brought out of the meadow, and lodged in the pens; but, after this time, they may be left in the pasture as well in the night season as in the day; and at this time their food may be lowered by degress, till it be at length reduced to simple water only; for, when the calves get to the age of twelve or fourteen weeks, they will no longer require the aid of this sustenance, but will be able to satisfy their appetites by grass.—Care, however, must be taken throughout the summer that they be frequently shifted from one pasture to another, in order that they may be kept up in good flesh, and enabled to grow away with the utmost celerity. At Michaelmas, or soon after, the calves should be taken into the yard; and if they were allowed the indulgence of a small close to themselves it would be still better.

The treatment of young cattle, from the time they are separated from their dams, or able to subsist on the common food of the other stock, must entirely depend upon the circumstances of the farm on which they are reared. In summer, their pasture is often coarse, but abundant; and in winter, all good breeders give them an allowance of succulent food along with their dry fodder. The first winter they have hay and turnips; the following summer coarse pasture; the second winter straw in the fold-yard, and a few turnips once a day, in an adjoining field, just sufficient to prevent the straw from binding them too much; the next summer tolerably good pasture; and the third winter as many turnips as they can eat, and in every respect treated as fatting cattle.

The method of managing young cattle during the first winter is, according to Donaldson, pretty generally the same in every part of the island. They are almost always housed: sometimes bound up to the stall, but more frequently allowed to remain at freedom. The way of feeding them in England is chiefly with hay, or hay and straw mixed; and in Scotland, sometimes hay, but more frequently straw and turnips. They are mostly turned out on some of the inferior pastures on the farm the following summer, and maintained the second winter on straw in the straw yard, or in houses or sheds erected for the purpose. Some farmers in the more northern parts of the kingdom, from being situated at a distance from any market at which they can dispose of stall-fed beef, very frequently give a considerable part of their turnip crop to their young cattle. This is, he thinks, an excellent practice; and one that ought to be followed, even by those who, from being better situated in regard to markets, can adopt other methods of using turnips to advantage. The benefit of green winter food for live stock is so great, that there is probably, he says, no way in which turnips can be used, by which the farm or the farmer would reap greater benefit, than by giving the young cattle a daily allowance during the first two or three winters.

ART. 7.—*Experiments on the native Potatoe of S. America.* By DANL. PHELAN. [Communicated for the N. Y. Farmer & Hor. Repository.]

MR. EDITOR—I am a subscriber to your most valuable and useful publication, and being desirous to promote its objects, I cannot allow any thing of importance which may come under my practice in the vegetable creation to pass without submitting the substance of it to your disposal. When gardener for that enterprising professor of Botany, David Hosack, I received some potatoes which had been furnished him by Com. Hull, who obtained them from some part on the Andes in South America. They were of a deep purple colour, roundish shape, small size and having 13 eyes. I planted them in March 1827, and their vegetable appearance above ground was about the end of April, when they continued to put forth square shaped vines vigorously, until the end of Oc-

tober, when it flowered profusely of a pale pink colour. I examined their roots and found they had produced no potatoes, but sent out fibrous roots in great abundance and in every direction around them. I looked at their fibrous roots, and found them in joints about 4 to 5 inches distance from each other, and every joint produced a new vine. Before frost set in I covered them with a frame well lined with dung and litter, and left them until February, 1828, then their flowers were faded and dropping off, but still continuing to push up numerous vines all around at a considerable distance from where they were planted, which now filled the surface included in the frame, but had produced no potatoes. In the beginning of May, I removed the frame, &c. cleared and loosened the ground about, and found their fibres had pushed beyond the inclosure of the frame. I now examined them, when I found potatoes produced along the fibres and at the joints where it had sent up the vines about the size of a robin's egg. In August, 1828, they occupied a considerable square of ground and continued to progress rapidly.

In consequence of their luxurient growth it is my humble opinion when once acclimated to this part of the continent, they may render the cultivator a grateful reward and become a valuable root for the table.

DANIEL PHELAN, Gardener.

New-York, Dec. 23, 1828.

ART. 8.—*Garden Products of England and the United States. Communication from Mr. Thomas Hogg, acceeding to Mr. Wilson's choice of umpirage.* [To the Editor of the N. York Farmer.]

SIR—From what is stated or rather requested by Mr. Wm. Wilson, in article 181 of your Repository, I consider myself called upon to say something in the way of a reply to the position which that gentleman has taken in the controversy between himself and Betula Alba.

I would briefly observe that Mr. Wilson is at perfect liberty to avail himself of whatever means he may think fit, in order to extricate himself from his difficulties. It appears to me, however, the course he has taken will afford him no relief.

Betula Alba took the position, allowing that none of the list of fruits and vegetables mentioned by the American Horticulturist, could be brought to perfection in the climate of England, it by no means proves that that climate is inferior to this in point of congeniality for garden products. Betula Alba has indeed asserted that several of the vegetables enumerated by Mr. Wilson (who has acknowledged himself to be the writer of that article signed Am. Hort.) do actually succeed in England equal to what they do in this country. This assertion Betula Alba is ready to maintain, not only from his own knowledge of facts, but from the works that have been published on English Horticulture. It is upon this original position he takes his stand.

Mr. Wilson may think by the new position he has taken, to be more successful than he has formerly been. We will with patience wait the issue; but appearances look very formidable against us; only look for a moment, at the situation of our antagonist, intrenched in one of the strongest possible positions that a human being can be placed in, "the eternal and unchangeable basis of the law of nature"—added to this, is a breast work composed of okra, tomatoes, peppers, Lima beans, Indian corn, squashes, pumpkins, water melons, cucumbers, grapes, &c. the whole being connected by a composition designated "no artificial aid." This breast work is to be protected, supported and defended by Jesse Buel, Esq. of Albany; and Mr. Loudon is to cut off all aid to Betula Alba from that quarter, except that which is altogether artificial.

Having thus stated the position of both parties, it would afford me pleasure to have Mr. Buel commence his defence of Mr. Wilson's assertion, that the grape vine is brought to perfection, with the greatest facility, in the open air and cultivated in the open field, and that without any artificial aid. When once Mr. Buel satisfies us on the grape, we will give him the Nectarine for a second subject, and so on we will continue until we get through the whole list of our fruits and vegetables. But then it will still remain a question to be asked, which is the most congenial climate for garden products. Mr. Buel no doubt will reply that he does not know, that he never was in England to see; and Mr. Loudon will naturally say, that he does not know, for he never was in America. And so in this way we shall be still left in the dark, except we take Mr. Wilson's method and "guess at" it.

As Mr. Wilson has acknowledged that all he has written about the climate and horticulture of England, is conjecture, I would therefore propose as an amendment to his proposition, to refer to Mr. Buel and to Mr. Loudon, or any respectable person or persons whom he may think fit to appoint, whether he or Betula Alba is the most competent to judge of that climate and its garden products.

Betula Alba served a regular apprenticeship to the business in North Britain, and studied and practised his profession, in various counties in England for the space of 20 years, and in this country upwards of seven years. Mr. Wilson came to this country from Scotland, when only nineteen years of age. I mention this circumstance merely to show the nature of the ten years practice that he had in North Britain. Should it become a question with

the above referred to gentlemen, Mr. Buel and Mr. Loudon, respecting the veracity of Betula Alba, he would refer them to Mr. Wilson, who has thought fit in one of your columns, to bring forward his testimony in favor of a dandy vegetable, the ten-week stock. I have another amendment to make to Mr. Wilson's proposition, and then I have done for the present.—It is simply this, that Mr. Buel and Mr. Loudon give their opinion respecting the indignant hooting and sneering of Betula Alba, in page 169 of your work.

THOMAS HOGG.

Rose Hill Nursery, Jan. 1829.

ART. 9.—*Introductory Remarks to a series of articles on the culture of useful vegetables not generally introduced into the U. States.—Directions for cultivating the Vicia faba or Broad Bean.* By T. BRIDGEMAN, Gardener. [To the Editor of the N. York Farmer.]

SIR—Towards the conclusion of my last communication, I intimated that I hoped to be better employed in future than to animadvert on Mr. Wilson's writings. I intend in the course of the year to furnish you with directions for the cultivation of such kinds of vegetables as have been hitherto scarce amongst us, and would remind your readers that though I have proved that we are deficient in quantity and variety of garden products, I have not stated as others have, that we have all that it is possible for us to obtain. There are many kinds of vegetables that may become more plentiful with very little trouble, such as Sea and Scotch Kail, Mushrooms, Artichokes, Borecole, Rhubarb, Coleworts, &c. There are also many other kinds of garden luxuries that will well reward us for our trouble. If, for instance, we can put you into a way of procuring some of the varieties of brocoli and fail cauliflower, we shall do some good; and I am fully convinced that many of the varieties of garden beans called broad beans, may be raised here, notwithstanding Mr. W. has endeavoured to undervalue these delicious garden luxuries, because he says that they "refuse to yield an abundant produce in America." The circumstance of Messrs. Thorburn & Sons and Mr. Smith of New-York, having imported and retailed many bushels every year, proves that they are considered as worth the trouble of cultivating. Mr Floy has some for sale of his own raising, and if we could ascertain the quantities planted in different parts of the Union, it would appear that they are very much esteemed. If we content ourselves with what our climate will produce with ordinary field cultivation, we shall be deficient in many of the most valuable varieties of garden luxuries.—Experience has long proved that it is necessary we should use all diligence before we shall be able to say with truth, what is stated in page 109 and 133 of your Repository, "It would be difficult to find the country that would upon the whole be justly considered to excel us, either in the *qualities or abundance* of our garden products—the benignity of whose soil and climate makes well up for any deficiency in skill or science, on the part of the cultivator." It may here be remarked that the extreme heat of our summers are as detrimental to the cultivation of some of the most valuable kinds of fruits and vegetables, as the coldness of our winters—and for these reasons, artificial aid is more necessary here in the winter and spring of the year than in England. The English may obtain an abundant supply of brocoli, cauliflower, radishes, lettuce and other salads, a great part of the year, and cabbages the whole of the year, without any artificial aid whatever; whereas, if we were to attempt to supply the New-York markets with such things in any thing like the abundance that they have them in country towns in England, it would require a greater quantity of garden frames, glazed sashes and other artificial aid, than is absolutely necessary to supply their markets with such vegetables that require extra heat.

It will be recollected that the great care bestowed by the rich and the great, and by market gardeners, near their large cities in England, is principally to supply their tables with fruits and vegetables out of the ordinary season, and I have no doubt but similar contrivances may be rendered profitable to gardeners in the vicinity of the large cities of this country.

I propose in this article to give directions for the cultivation of the Vicia faba or Broad Beans. Before I proceed, it may be necessary for me to give some further account of myself. I would therefore inform you, that I have paid some attention to the cultivation of the soil for more than twenty years, and that for the last nine years I have had the management of a garden consisting of from three to four acres, in the vicinity of New-York, and having kept a particular account of every transaction, I have proved the result of such experiments as I have tried, some of which I shall recommend to your attention. It is true my practice in this country has been confined to the cultivation of such kinds of vegetables as are most profitable for a market gardener to raise, but I have in times past paid some attention to the cultivation of some of the choicest kinds of vegetables in England, and I hope to show that I have at least a disposition to benefit my fellow-citizens by the discoveries I may make. If it should appear that I possess the "talent of suggesting new principles of science or presenting more forcible illustrations of old ones, by which to add something to the stock of knowledge already attained," I shall give greater proof of my devotedness to the interest of this my adopted country by

imparting this, than by exclaiming against foreigners or undervaluing the garden productions of other countries.

I would remind your enlightened correspondents that I am alike liable to err with other men. I appear before them in order to be instructed, while I am attempting to impart the small stock of practical knowledge I possess, for the benefit of those who are less acquainted with horticulture than myself.

Directions for the Cultivation of the Vicia faba or Broad Bean.

The principal cause of these delicious garden luxuries not succeeding well in this country, is occasioned by the summer heat overtaking them before they are podded, causing the blossom to drop off prematurely; consequently, the crops are poor and scanty—to obviate this difficulty, they should be planted as early in the year as possible. They are generally planted in England from October to April for early crops, and from that time to July for late crops. It sometimes happens that their early plantings are injured by the extremity of their winters, but they never miss having an average crop. In order to insure success here, I would recommend those who are desirous of obtaining a tolerable supply of these vegetables, to plant them early, as it will be recollected that they will be deficient in quality as well as in quantity on the approach of the warm weather. If the ground should be frozen the last week in January or the first in February, let them be planted as soon afterwards as possible, in drills two inches deep, and if it should happen that they cannot be planted by the middle of February in the place where they are to stand, let some of the early kinds be sown pretty thick in a bed of light earth; and when come up to an inch or two in height, transplant them in rows from thirty inches to three feet asunder, according to the size and kind, and the beans two or three inches distant in the rows. The method is this: dig a bed about three or four feet broad, of good earth, in a warm situation; this being done, draw broad drills with a small spade or common hoe flatways across the bed, and scatter the beans pretty thick in the drill, and draw the earth equally over them: and thus if severe frosts should prevail before they come up, or in their infant state, while remaining all together in the bed, they can be readily protected from frost with frames, matts or litter, until fit to transplant. As soon afterwards as the weather is favourable, let them be taken up carefully out of the seed bed, with their full spread roots and as much earth as will hang about them, and be carefully transplanted as before directed, observing to close the earth lightly about every plant. They will soon take root and grow freely. This method is considered by some as preferable to the general method of planting them in the place where they are to stand, as it is said that the beans by transplanting generally come into production several days sooner. It may be necessary to observe that a strong heavy soil is the most suitable, but they often do well in moderately light low ground. The early kinds may succeed if planted in the month of March, but it is from the early sown crops that any tolerable produce may be expected in the United States, especially in the middle and southern parts. The Mazagan and Lisbon are the earliest, the white blossom bean is very delicious, and boils much greener than any other kind; but the green Genoa bears the heat of our climates better than either of the others, and therefore is the most suitable for late crops. The long podded bean is very good, and bears well; but the Windsor, Sandwich, Toker, and broad Spanish kinds, are more esteemed than any other. The dwarf cluster bean is a great bearer, never grows above a foot or fourteen inches high, and may be planted in rows either in beds or borders, the rows to be about two feet asunder, and as this kind branches out considerably from the root, the beans must be planted in single rows and five or six inches distant from one another.

For the sake of those who have small gardens, I would recommend all the kinds to be planted in rows four or five feet apart, in which case a row or two of cabbages may be planted between each row of beans. As I am anxious that these delicious garden luxuries may have a fair trial in this country, I shall in the course of the year, endeavour to get some of the best kinds from England. The sorts sold by Messrs. Thorburn & Sons, Mr. Smith and Mr. Floy, are the Early Mazagan, Broad Windsor, Sword long pod, Green Nonpareil, Heligoland, and Horse Bean. It will be necessary to plant a few rows of each of these kinds with any other that can be obtained, as soon as possible. If all the different varieties are planted at one time, they will come into bearing in a regular succession, according to their different degrees of earliness—and it will be necessary to repeat the plantings every two weeks, from January to the latter end of March. If the ground should not be in good condition for planting or sowing in beds, as before directed, they may be sown in boxes of earth placed in a light cellar or in earth on the floor. As soon as the beans are three or four inches high, they will need a careful hoeing, and if some earth be drawn up to their stems three or four different times in the course of their growth, it will greatly refresh and strengthen them. When they are arrived at full bloom, and the lower pods beginning to set, the tops may be broken off. If this be done at the proper time, it will greatly promote the swelling of the pods, as well as their early maturity; for having no advancing tops to nour-

ish, their whole efforts must go to the support of the fruit

I intend in my next to offer some remarks on the cultivation of Rhubarb.

I remain, sir, your ob't servant,

T. BRIDGEMAN.

Bowery Road, Jan. 1829.

ART. 10.—*On the Utility and Improvement of Studying Agriculture as a Science.* [From the Farmer's Library.]

Since the science of Chemistry has become fashionable, and been considered one of the most useful and important sciences, agriculture has derived from it improvements which could be obtained from no other source. The great object of agricultural chemistry is, to explain all those changes in the arrangement of matter, which are connected with the growth and nourishment of plants; the constitution of different soils; and the manner in which lands are enriched by manure, as well as the particular manner in which they are rendered more fertile by the various modes of cultivation. This knowledge is highly useful to the practical farmer, by furnishing him with simple and easy experiments for directing his labors, and enabling him to pursue a certain and systematic plan of improvements; and it will be found not only useful, but indispensible in its application, in most, if not all his practical experiments. Every intelligent farmer, who can read our language, may obtain enough of this science, to render his labours more easy and more efficacious. The connexion of chemistry with agriculture, is not founded on uncertain speculations, but furnishes principles which must be understood and followed, to insure to the practical agriculturist any considerable degree of success. It is an erroneous opinion, which extensively prevails, that the science which may be efficacious in its application to the culture of a particular soil and climate, cannot be so, to that of others. The principles of agriculture are uniform and universal in their operations; and it is the business of the intelligent farmer to vary the application of them, according to the nature and condition of the soil he cultivates.—There is in every climate some soils to be found which contain an excess of some of the original earths, of sand or clay, for instance. A chemical analysis of the soil, has proved what proportions of these are most conducive to fertility; and, when proper portions of each cannot be procured, what other substitutes may prove most efficious. Sir Humphrey Davy, in his introduction to agricultural chemistry, remarks, that some lands of good apparent texture are yet sterile in a high degree; and common observation and common practice afford no means of ascertaining the cause, or of removing the effect. The application of chemical tests in such cases is obvious; for the soil must contain some noxious principle which may be easily discovered, and probably easily destroyed. One of these noxious substances, which such a soil may contain, is the salts of iron. This, chemists have discovered, may be decomposed or destroyed by lime. But this defect in the soil, or the remedy, might not be discovered by the practical farmer in five hundred years. This is only mentioned as one of the numerous instances which may convince us, that the farmer, without any knowledge of agricultural chemistry, might lose a great proportion of the profits he might derive from his labours. Industry, in any lawful pursuit, is more efficacious when aided by science. While the practical farmer is ready to acknowledge this, yet many of them will say that the knowledge they derive from experience is most correct, and sufficient for all the more important purposes of agriculture. It is true, some of the most valuable acquisitions of this science have been developed by the practical discoveries and improvements of the husbandmen. But the progress of knowledge in this science has, like that of all others, been gradually acquired. And it is easy to conceive that many useful discoveries, made in one period of time, when consigned to no other record but that of tradition, may be lost, even to the succeeding generation. It is a well attested fact, that but about forty years ago, the farmers in many parts of the New-England States, had imbibed an opinion that wheat could not be cultivated to advantage, except on land newly cleared; and actually procured that article for their consumption, principally from the new settlements at the north and west. They were generally ignorant of the means of reviving an exhausted soil and of fertilizing it by cultivation. Even the improvement of the soil by stocking it with clover, is of recent date, although it was then, as it now is, a well attested fact that the soil of Great Britain, the native country of their ancestors, has been increasing in fertility for more than five hundred years. It is not strange that much of the agricultural science known by the ancient or modern Europeans, should be lost to their descendants in this country. Surrounded as they were by savage tribes, they had enough to do for more than half a century, to provide for their personal security, and defend themselves against the horrors of cold and hunger. Their condition would not indeed admit of the practice of that science necessary to an improved state of cultivation. But it is very obvious, that had they preserved records of it, and assiduously improved them, as they probably did those of many others less interesting, it would have greatly meliorated their condition.

The knowledge of the mechanical arts, and indeed

the whole science of civilized man, has been the result of the progressive improvements of individuals; the aggregate of their discoveries has contributed to these improvements, and has at last, and after a long succession of years, resulted in the knowledge of the various arts and sciences which have distinguished the civil from the natural state. The mechanical arts depend on certain fixed principles, and are performed by simple and uniform operations: whereas the business of husbandry is to be directed according to every change of weather, and the great variety of the properties in different soils; and also many accidents which must continually vary its operations, to render them successful. From these and various other considerations, it is, that a competent knowledge of the science should embrace the experience and the philosophy of the whole age in which we live. The improvements which have been sometimes made in our country, and which are supposed by many to have resulted from recent discoveries and observations, are found, on examining the history of the science of agriculture, to have been practised hundreds of years ago; and the knowledge of them but recently developed to us, by that spirit of enquiry which the combined efforts of a few individuals have inspired. But the efforts of a few individuals to promote the science of agriculture, cannot be extensively and permanently useful, unless our farmers generally believe in its importance. And there is among our citizens, a disposition too prevalent, to treat every proposition for improvement as chimerical, or a useless innovation. This disposition is not unprecedented. Instances enough might be adduced, in which error has been venerated for its antiquity, while truth has been discarded for its novelty. Even in this enlightened republic, this age of reason and philosophy, the first efforts for the abolition of any popular custom, however absurd, are often charged with the epithet of a visionary project. But those who would estimate the correctness of their habits and their prejudices by the antiquity of their origin, or are willing to limit their knowledge to those improvements which are the result of their own personal observation and experience, should be reminded that the idea of treating agriculture as a science, and of improving its condition, by collecting and recording the precepts and discoveries which relate to it, is not a new one. Three thousand years ago, the Greeks, whose wisdom and whose science gave to the nature of man a new and distinguished lustre, considered that the business of agriculture could not well succeed and progress towards perfection, without a knowledge of those precepts which had resulted from a long series of observations and experiments, which should embrace the philosophy and the practical discoveries of the whole age in which they lived. Several writers among that illustrious people, employed themselves in collecting such precepts, and recording them for their own improvement, and the benefit of their posterity. Several of their celebrated philosophers, as Democritus, Archylas, and Epicharmas, left useful instructions on the subject of agriculture; and many ages before them, they had been sung by Hesiod, in one of his poems. And many of those precepts were transmitted through successive generations to our ancestors. Whatever knowledge of those precepts is possessed by their descendants, the farmers in the United States, has generally been acquired either by tradition or observation. Traditions, it will be acknowledged, are often founded in error, and the evils resulting from them descend from generation to generation. The observations and successful experiments of intelligent farmers, it is evident, cannot be extensively communicated to others, but through the medium of the press. Such is the condition of many young gentlemen, when they commence the business of agriculture, that they have to depend for their knowledge on their own practical experiments: to acquire this so as to render their labours most efficacious, may, and often does, require the greatest and best part of their lives; when by a very little expense of time and money they may learn from books what have been the results of the most important experiments in the history of agricultural science. It is very obvious then, that the maxims and principles which relate to it, should be correctly recorded and studied, as other sciences.—The innumerable volumes that have been written upon this subject, among the wisest and most learned nations, may convince us that it has been so considered by them, and not regarded as a matter very easily understood. But the great mass of our common farmers, whose minds are not much enlightened by general science, cannot expect their occupation will ever be elevated in public opinion, to that dignity among the employments of men, which it ought to sustain, so long as they are disposed to treat it as a mere menial exercise, and unworthy the efforts of intellectual capacity. The knowledge which gives man his supremacy over the beasts of the field, and the fowls of the air, and which bestows on individuals among mankind, a pre-eminence more substantial and less invidious than birth, wealth, titles, or popular applause, can be acquired only by three modes, observation, conversation, and reading. Although observation and conversation are fruitful resources for the attainment of useful ideas, the impressions they make are but transient, and when committed to no other record but that of the memory, cannot be rendered permanently useful. But when a useful discovery or improvement in agriculture, as well as in any other occupation, is committed to the press,

and by that means preserved, they may thereby become extensively useful, not only to our citizens generally, now on the stage of life, but to remote posterity. Many of the sciences are industriously pursued, and considered as objects worthy of great attention, on account of the intellectual pleasure they afford, and because they enable us to extend our views, and to reason more correctly concerning the objects which surrounded us. But the discoveries in the cultivation of the earth, are not confined to the time and country in which they are made, but may be considered as extending to future ages, and intended to meliorate the condition of the whole human race, and providing subsistence and enjoyment for generations yet unborn.

ART. 10.—*Report of the Deputation of the Caledonian Hor. Society sent to the Low Countries and France.* [From the Mass. Agric. Repository.]

The Caledonian Horticultural Society in 1817, sent a deputation into the Low Countries and France to ascertain what improvements had been made in Horticulture or Gardening, during the twenty years in which intercourse had been cut off between Scotland and the Continent by that scourge and disgrace of human nature, war. It was a most praiseworthy example, and the reports of that committee have been published this year, 1823, in an octavo volume full of interesting matter in relation to Gardening, to fruits, and orchards. We shall only have time and room for the insertion of some short articles.

At Bruges in Flanders, proverbially the seat of the most improved agriculture, the committee on the 12th of August, make the following remarks: "In the course of our evening walk, we were attracted by a novel appearance in husbandry, the labors of the seed time and harvest seeming here to be united and contemporaneous. We entered a fine field of luxuriant rye, part of which remained uncut, but a large proportion had been cut down this morning (August 12th.) The crop had been carried aside; well rotted dung had been pretty liberally laid on the stubble; the Flemish plough was now at work: and to complete the picture of industry, and expedition, a man was actually engaged in sowing turnips on the same portions of the ploughed fields from which the rye crop had been reaped in the morning." This example ought not to be lost upon us. Our sun is much more powerful, and our vegetation more rapid than in Flanders. We know that some farmers do raise their second crops with us; but may we not carry this system much farther? We certainly can do it, by limiting the extent of our cultivated grounds, and bestowing greater labor on the quantity we do cultivate.

PROFESSOR VAN MONS OF BRUSSELS.

The Caledonian committee above mentioned, visited the nurseries of this active and intelligent horticulturist. He is Professor of Chemistry at Louvain, but has turned his attention very extensively to the improvement of fruits, principally on the plan of Mr. Knight, by raising new varieties. Of new varieties of seedling pears, raised chiefly by himself and Monsieur Duquesne, of Mons, he considers that his collection contains about 800; being asked by the committee, whether he meant that they were all good, he replied, that there were *that* number worthy of preservation. We must, however, put down a considerable portion of these as favorites from paternal regard, for we do not find that the London Horticultural Society to whom he has sent his best samples, have as yet admitted more than half a dozen into the catalogue of good fruits. Still his zeal is worthy of great praise. Our old fruits are running out, they are subject to constantly increasing diseases. They must have been all *first* obtained by seedlings, and when a good variety was thus procured, it was propagated by grafts. Thus it has been with our Seckle pear, the only known excellent pear ever produced in the United States. It is now in every good garden. But the present age is not content with raising one good sort in a century. It is the fashion to try the powers of nature, and the next generation will see not only a greater variety, but probably enjoy much better kinds than any age which has gone before them.

SWEET POTATOES.

The sweet potato (Convolvulus Batatas) has been of late introduced into culture at Paris, and sent to that market for sale, and has been strongly recommended by Mons. Lelieur in a memoir on that subject. Neither the soil nor climate of Paris is half as well calculated for this plant, as those of the vicinity of Boston. All the counties of the Old Colony, part of Middlesex, and some of the warm spots in Hampshire are excellently adapted to it. In Worcester and Berkshire it would probably not succeed, except in some favored spots; but if the horticulturists of Paris have waited 200 years since they were introduced into Spain, it is not surprising that we have so recently brought them into experiment.

A PHENOMENON IN GRAFTING.

At Brussels, the Committee of the Caledonian Horticultural Society witnessed one of the most extraordinary experiments in grafting; that of inserting *an entire tree*, on the stump of another. A neighbor, having in the spring season cut down an apple tree, about fifteen feet high, which Professor Van Mons considered a desirable kind, and a good healthy tree, he immediately selected a stock of *similar* dimensions, and cutting it off near the ground, placed on it by the

mode of *peg* grafting, the foster tree; supported the tree by stakes; and excluded the air from the place of junction, by plastering it with clay, and afterwards heaped earth round it. The experiment succeeded perfectly; the tree becoming in the course of the *second* season nearly as vigorous as ever.

Now, though we would not recommend this expement, because it must be very precarious, and seldom useful, yet as being one of the highest triumphs of the horticultural art, we thought it worthy of a place in this Journal. The first thought of transferring from one tree to another a different species of fruit by a naked wooden stem, was undoubtedly bold and happy; but an attempt to transfer a *whole* tree in this manner, is certainly original.

By *peg* grafting it must be understood, that mode of grafting which can only be practised on trees of *exactly* the same circumference, the barks of which respectively will come into perfect contact. A hole is made in the stock, of an inch or more in depth, and the inserted tree or scion, is pared away so as to fit exactly the hole so made. The surfaces of the bark of each are then cut off smoothly, so as that the bark of the inserted tree will fit exactly all round with that of the stock. It is indispensable, that the liber and alburnum, that is the inner bark and the white wood of each tree, should exactly meet. The experiment was more curious than useful, but as a fact in natural history, it is deserving of notice. Few men would probably succeed in the attempt, but that it *can* be done in *any* case, almost staggers our faith; yet the authority is very respectable.—Ed.

ART. 11.—*Cultivation of the Vine.—Directions for selecting the best cuttings for early maturity and abundance of fruit.* By Danl. Phelan, Gardener. (To the Editor of the N. Y. Farmer.)

Sir—The attention which is now paid to the cultivation of the grape, induces me to offer the results of my practice and observation for insertion in your columns. The success in obtaining a fruitful vine, depends much on a proper selection. Cuttings, however, under proper management, will produce fruit sooner and of a better quality than rooted plants.—They should be taken from good bearing plants near the bottom of the vine, have their eyes round and plump, their joints short, and their wood cylindrical. Cuttings taken from near the bottom of the plants, and having these properties, will be fruitful, while those from the upper part, although they may seem to have some of these properties, are far inferior and will generally be found longer jointed, softer in wood and more apt to shoot out into great and rambling wood.

When the cuttings are taken off, they should contain 3 eyes, the tops should be cut sloping a quarter of an inch above the upper eye. They then should be put in light dry ground, not too near together, to the upper eye, pressing the ground close to them.—Before frost they should be covered with dried straw, which should remain until they are wanted in the spring. At this time, the knife should not be used, as it will cause them to bleed and thus destroy them. Some may think all this precaution unnecessary, and that cuttings taken from any part of the vine, if they have the outward appearances of those taken from the bottom, will succeed equally well: but let them try the experiment, and they will soon be convinced of their error. The bottom cuttings will shoot less vigorous but will be more fruitful.

Cuttings are much the best for making all kinds of vine plantations It is objected that they are longer in bearing than young plants. This I have never found to be the case; for if young plants are brought from any distance, it will be necessary to cut off all the fibrous roots, which will so far impede their growth, that the shoots from cuttings will be stronger and bear fruit sooner, and of a superior quality.

Where there is an old plantation of vines and a strong plant is wanted for any particular place, if it is taken up carefully with a good base and planted immediately, it will answer well, but this is only moving a few from one part of the garden to another. If the vine be very old it is difficult to be done with success.

There is still a better way to have finer grapes and to have them sooner. Provide some good hot dung from the stable as for a cucumber bed. Make it up in the same way, but two feet wider than the frame that is to cover it. Two or three feet will be sufficient, but it must be trodden to prevent the heat being too strong at first. Stake it all round the sides with stakes two feet long, and wind them with straw ropes very close to the top. Procure some fresh tanner's bark from the tan-pit. If the bed is to be covered with a three-light frame which will hold 90 plants, four loads of bark will be sufficient, and so in proportion. If the bark can be made dry before it is laid on the bed, it will be the better. Spread it all over the bed, put on the frame and glasses, let them lie close until the heat is risen, which will be in three or four days, when it will be of a moderate temperature. When all has been performed as directed, prepare some mould, rich and fine, take some flower-pots and into each put one of the cuttings; but be sure there is an inch of mould between the bottom and the lower end of the cutting. There should be only one eye left out of the mould, and the top of the cutting should be sloping to one side of the pot when planted. Plunge them into the tan half the depth of the pot at first, for they require little heat for some

time; put on the glasses and give them air night and day, as long as there is any steam in the bed. Give them no water while the steam is strong in the bed, for although they have air, they will be all wet with it in the night. It will be proper to shade them in the day if very hot; when the vine begins to push, by which time the steam will be gone, give them a little water at the bottom when the mould appears dry; but care must be taken to give it sparingly and often, for too much at a time would rot them. It will be of great service to sprinkle them all over twice a week in the evening and shut the glasses close, but they must have air in the morning early to dry the wet before the sun becomes hot, for if they are wet it will scorch the end of the bud and prevent its growing. They will require little water for the first three weeks when the heat begins to decline, which will be about five weeks, for the bark will grow mouldy and then loses its heat; take all the pots out and stir the bark down to the dung, level it and plunge the pots up to the top; put on the glasses and give a little air, for although there will be neither heat or steam for three or four days, there will be a rancid smell, which will be very prejudicial to the plants and turn them yellow. When the heat rises, if moderate, which it generally is, there will be no further trouble with it, for it will last long enough to bring the plants to perfection. But if it should be very hot, which sometimes happens, the pots must be raised until the violent heat is over, and then they may be let down only stirring the bark deep enough to plunge them to the top; they will now require a good deal of water if the weather is warm. Should they push more shoots than one, take them off as soon as they appear; put a stick to that which is to remain, and tie it up as it advances in height, for it will be of great detriment to the plant and retard its growth to let it lie down; the frame should be raised as the plants grow high, so as to keep the glasses a foot from the top of the plants, but the bottom of the frame should be kept close, so that no air can get in, which will be easy to do, as the bed is broader than the frame; by sticking a few stakes round and stuffing straw between the vacancies. As the plants advance in height, they will push out side-branches at the eyes, which must be constantly picked off as they grow, but not in the common method which is to break them off a joint above the eye; and then they will push again at that place and never hurt the bud that is to remain for next year's shoot. When they are taken off close to the bud it often pushes, and that joint is lost; if near the bottom, although it does not push, there often comes one, sometimes two branches, just by the eye, which weakens it greatly and renders the place very unsightly. This should be observed in taking off the side shoots of all ages, that they push again much sooner when they are pinched off at a joint than when they are taken off close, and will require a little more labour to keep them clear; but by this method the eyes are all saved, and as they push much weaker when they are pinched off at a joint than they are taken off close, the vine buds for next year are much stronger and consequently in the better state for bearing good fruit. The bed for the vines should be made the beginning of February, and if all succeeds well, they will be fine strong plants five to six feet high the beginning of June, at which time we should begin to harden them, first by taking off the glasses morning and evening, and giving them air all night, for if great care is not taken they will be stopped in their growth and turn red, which will be of bad consequence as then they will not strike root after planting. There is no other difficulty in keeping them growing, than being cautious in giving them air gradually, and not exposing them to the sun above an hour in the morning. Take off the glasses at six o'clock in the morning and let them stand so till ten o'clock; after they have been used to that management for ten days, they may stand uncovered all night and have a great deal of air in the day time. If a dull soft day happens, they may be uncovered all day. When they are so hardened that they can stand the sun, they are then ready for planting, which will be about the beginning of July, and they will have time to strike root in the common borders before winter, and will be very fine strong plants.

I am, sir, your's respectfully,

DANL. PHELAN, Gardener.

New-York, Jan. 26th, 1829.

ART. 12.—*Officers and Constitution of the Albany Horticultural Society.*

The Albany Horticultural Society met agreeably to adjournment, on Thursday evening, the 15th inst.—Hon. Alfred Conkling, from the committee appointed for that purpose, reported a constitution and by-laws for the improvement of the society, which after slight modification, were adopted. The following officers were then elected:

Jesse Buel, President.
Alfred Conkling, 1st Vice-President.
Teunis Van Vechten, 2d do.
Edward C. Delevan, 3d do.
Douw B. Slingerland, Treasurer.
Lewis C. Beck, Corresponding Secretary.
John Ogden Day, Recording do.

Council.—John N. Quackenbush, John L. Winne, John I. Godfrey, Richard M. Meigs, Andrew Kirk, Caleb N. Bement, Isaac Denniston, John Bryan, James Wilson, Henry A. Fay, George Wilcox, Paul

Clark, Edward Dunn, T. R. Beck, and Henry W. Snyder.

The constitution provides for four stated meetings annually, on the first Tuesdays of December, March, June and September, the last of which is to be the anniversary meeting for the choice of officers, &c. There will, besides, be other meetings of the council, or of an examining committee, to inspect esculents, flowers and plants presented for competition or comparison. The members are required to pay two dollars per annum. All subscriptions and donations, (unless otherwise directed by the donor,) are to go into a permanent fund, which cannot be impaired until the principal amounts to five thousand dollars.—The interest of this fund, and two dollars annually paid by each member, will be applied, it is understood, in premiums, in the purchase of horticultural works, and in defraying incidental expenses.

An experiment of a few years will test the utility of this association, and afford data to determine on the propriety of extending its views to the establishment of a Botanic Garden—an ulterior object not only desirable for its intrinsic usefulness, but for the interesting attractions it would present to the citizen and stranger.

It is gratifying to state that the advantages which promise to grow out of this association, appear to be duly appreciated by our citizens, nearly one hundred of whom have sanctioned it with their names; and we indulge the hope that the number will be considerably augmented.—*Albany Argus.*

ART. 13.—*Report of the Inspecting Committee of the N. York Horticultural Society for* 1828.

The committee of Inspection respectfully report, that they have held weekly sessions throughout the past season, for the purpose of receiving such articles as were submitted to their examination. They are gratified in being able to assure the Society that these exhibitions have been uniformly of the most interesting character, and calculated to afford the most satisfactory evidence of the skill and success of the several members whose productions were examined. Although in the variety of articles, these exhibitions may have been deficient in comparison with some former seasons, yet in general, the productions inspected have not fallen short in size or other distinguishing excellencies. With few exceptions the specimens have consisted of such horticultural objects as are generally in most demand throughout the country, and which are actually acclimated to our soil or capable of becoming so, and which consequently do not require the aid of artificial cultivation. Several of the most valuable articles of this description, which were almost unknown in our city a few years since, have by means of the skill and efforts of members of this Society, been brought to our market in such quantities and at such prices, as to have become common luxuries to our inhabitants. Among these we might instance the article *Brocoli*, which is now readily to be obtained in heads averaging from 2 to 4 lbs. for several of the fall and winter months, at prices little exceeding the ordinary rates of cabbage. The same thing may be said with regard to the cheapness of cabbages, lettuce, potatoes and peas, particularly the sort known as Bishop's early pea, lately introduced by a member among us, and remarkable for its early and abundant produce.

The attention of our members has been also directed successfully to the cultivation of the finer kinds of fruit with the same reference to the sorts most capable of sustaining the vicissitudes of our climate—among these, the *Vine*, which has of late years attracted such general attention among our countrymen, may be noticed as a prominent object of regard among the members of this society. In the course of the season, the committee have examined specimens of several different kinds of foreign grapes which have produced fruit in perfect maturity and great luxuriance, in the open grounds of our city and its vicinity. From this fact the committee entertain a well grounded hope that the obstacles which our climate presents to the cultivation of this delicious fruit will ultimately be overcome.

The committee have further to report with respect to another article of the highest importance to the horticulturist, the *Peach*, that they are led to anticipate a return of the former abundance of this unrivalled fruit. From the specimens which they have inspected, which were produced in the open grounds and gardens in and near the city, they are persuaded that in flavor and size, the peach has in no wise degenerated from its former excellence, and they are persuaded that the enquiries and experiments which have been instituted among the members to ascertain the cause of the late scarcity and difficulty of culture, and to remedy the evil, will be crowned with success.

The exhibition of apples, pears and plums, have also been of the most interesting description. Several new and valuable varieties imported by members of the Society, have produced fruit which promise to become important additions to our already extensive catalogue of these species.

With respect to the interesting department of our science, Floriculture, abundant testimony of the increasing attention paid it, has been presented to the committee. During the whole course of the season, the exhibitions of this branch of horticulture have been uncommonly rich and the contributors numerous. The correspondence which several of our members maintain with the best gardeners of Europe,

has enabled them to add many rare and splendid contributions to the stock of our cultivated flowers—at the same time that the many beautiful specimens of native plants which have been brought to their notice subjected to cultivation in several of the gardens of our members, is a gratifying proof that the rich mine of our indigenous flora has not been neglected.

On reviewing the proceedings of the past season of exhibition, the committee perceive abundant cause of congratulation to the Society. The members are advancing with vigor, harmony and success, in promoting the objects of the institution; and the influence which their labors must exert in the community, cannot fail to have the most salutary effects in eliciting improvements in horticultural science generally.

The following is the list of members to whom the premiums are due for the several articles exhibited before the committee, viz:

E. H. Warner,	Best Hyacinths.
Wm. Phelan,	Best Carnations.
Daniel Phelan,	Early Potatoes.
"	Early Cucumbers.
John Curr,	Early Peas.
"	Carrots and Beets.
"	Lima Beans.
"	Brocoli.
D. Phelan,	Largest Cauliflower.
T. Kinnersley,	Early Cabbage.
Wm. Curr,	Largest Lettuce.
"	Best Celery.
Michl. Floy,	Knight's Marrow Peas.
George Still,	Cichory.
Ingle Ficke,	Late Carrots.
"	Savoys.
Francis Cooper,	Strawberries.
Wm. Neale,	Gooseberries.
E. H. Warner,	Apricots.
Alex. Smith,	Peaches.
"	Pears and Plums.
Wm. Wilson,	Muskmelons.
Alex. Smith,	Grapes.

They recommend that a discretionary premium be awarded to the following gentlemen for articles not specified as subjects of competition:

Mr. Andrew Parmentier for the great variety of grapes cultivated by him; Mr. Peter Aymar for fine quinces; Mr. Floy for raising 5 new sorts of seedling *Camelli a japonica*; Mr. Phelan for new seedling Geraniums.

Mrs. Griffith, Messrs. Hogg, Wilson, Prince, Saltus, and Thorne for the number and variety of choice and rare plants, and fine fruit exhibited.

Premiums for the following articles are offered by the Society, for the year 1829:

FLOWERS.

Polyanthus, Auriculas, Carnations, Pinks, Tulips, Hyacinths. The days of exhibition to be fixed by the Inspecting Committee.

VEGETABLES.

Cucumbers,	Best pair,	earliest forced.
Peas,	" 1 quart,	last Tuesday in May.
Cabbage,	" 4 heads,	do. do.
Potatoes,	" half peck,	do. do.
Beets,	" 6 roots,	second Tuesday in June.
Carrots,	" 6 roots,	do. do.
Celery,	" 6 plants,	last Tuesday in July.
Lima Beans, (earliest,)	" 2 quarts in pods.	
Lettuce,	" 4 heads,	the season.
Cauliflowers,	" 2 heads,	do.
Knight's Marrow Peas,	" half peck,	do.
Cape Brocoli,	" 4 heads,	do.
Savoys,	" 4 heads,	do.
Sea Kale,	" bunch.	

FRUIT.

Peaches,	Best dozen.
Plumbs,	" do.
Pears,	" do.
Nectarines,	" half dozen.
Apricots,	" dozen.
Grapes,	" 2 bunches.
Strawberries,	" quart.
Muskmelons,	" pair.
Gooseberries,	" dozen.

For a native hardy grape to give a good wine.

For the best seedling apple for making cider, the specific gravity of which must exceed 1,090; also for table use.

The day for exhibition to be fixed by the Inspecting Committee and published.

Discretionary premiums will be awarded for flowers, vegetables, or fruit, presented by members, or others, when rare and of excellent sorts.

FRANS. COOPER, Chairman.

New-York, Jan. 27, 1828.

ART. 14.—*Making Butter in Winter.* [From the New-England Farmer.]

An English writer assures us that "in some places famous for making the best fresh winter butter, they set the pot of cream in warm water so long as till it has acquired that small degree of sourness, which it very soon has in warm summer weather."—A method similar to this is pursued at Orange, near Baltimore, on the farm of Robert Smith, Esq. "During the coldest weather in winter, in the course of less than twenty-four hours after the milk has been taken from the cows, sweet [not bitter] cream is produced, greater in quantity and richer in quality than

can be obtained in the ordinary management in five days. So rich indeed is the cream that it is churned with as much facility as is the cream of the Alderney cows, in the summer season. The operation of churning never exceeds twenty-five minutes. The butter from such cream has never failed to be of a fine flavor and of a fine color.

"The pans with the milk just taken from the cows remain until a thin skin of cream is produced. They are then placed in hot water, and in about twenty minutes thereafter all the cream contained in the milk is formed on the surface. The cream thus obtained is managed as other rich cream is in all well conducted dairies."

The quality of the cream, and consequently of butter made from it, depends chiefly on the food which is given to the cows. In Mr. Smith's mode of management the cows were fed with *steamed hay*. But when they are fed with straw (especially barley straw) or with turnips, the butter is apt to be *bitter* and *white*. To prevent the bitterness, the author of "Gleanings in Husbandry," &c. directs as follows: "Instead of putting the cream immediately as it is skimmed off the milk, into the jar or other retaining vessel, let it be first poured upon hot water, and stand till cool, then skim it off the water." And in order to give color to winter made butter it is directed to grate a well colored carrot into a little milk, which as soon as it is stained is strained from the carrot through a sieve, and then mixed with the cream."

ART. 13.—*Defence of the New York method of ornamenting public squares, in answer to frivolous surmises of writers who appear to be totally ignorant of the exalted conceptions entertained on these subjects by the inhabitants of the great city of Gotham.* (To the Editor of the N. York Farmer.)

Sir—In your last number of the Repository, I observed two communications, one headed "Ornamental Trees in New-York," the other "Planting Forest Trees in the streets, &c." The writers of both appear to be alike deficient in understanding the views of New-Yorkers in planting ornamental trees. The modes of transacting public business amongst such a commercial people as those of New-York, are naturally of a different character from those of more retired and less speculative habits; and although their trees do actually die by hundreds annually, their places are as regularly filled up by new supplies as their stock of merchandize is recruited by their active seamen. Mr. Buel does not seem to have taken into consideration in his recommendation for their selecting young trees from nurseries or cultivated grounds, that plants raised in such a way and of such a size as they procure, would cost nearly double the price. Those who raise the raw materials for the manufacture of goods, may calculate upon the sowing of their seeds, rearing the plants and bringing the staple to perfection, and nurserymen may recommend their young growing plants in preference to those of a more stately and advanced degree of maturity; but men of mercantile habits will always prefer the latter to the former, especially if to be obtained at a less cost. The permanency of the article must no doubt have some influence in determining their choice, but although in this they have hitherto been a little unfortunate in their tree speculations, there is little doubt but there are men of science enough amongst them, capable of applying the most successful remedy. The writer of the other communication alluded to, seems to be in a dreadful consternation at the neat and workmanship like manner in which the fine stately plants set out around the Washington Square, have been trimmed. The queries of such an ignoramus are not worth noticing, yet it is to be regretted that the planters after bestowing so much pains and skill in managing such a beautiful plantation of trees, had not advanced a single touch farther in their high degree of improvement, trimming, &c. The additional touch I refer to is not altogether an original idea, but its application in the manner that has suggested itself to me, is I am persuaded, both new and capable of being applied to most of the trees around our public squares, with the most valuable and permanent advantages. The thing is of itself so feasible, that it appears strange none of our eminent horticulturists have before recommended or applied it. The growth of strawberries is known to be improved by the application of fire to the plants, so as to burn up their leaves entirely. Posts also remain a far greater length of time uninjured in the ground by a judicious application of the same agent, and nothing appears wanting to secure the permanent durability of our ornamental trees, but the charring of one or two feet of the lower end of their stems previous to planting.

I am, sir, a lover of profitable

New-York, Jan. 1829. Speculation.

P. S. As economy never ought to be lost sight of in all our contrivances, the tops and every useless twig to be carefully stripped from the main stem might be most profitably employed for the fire wood necessary to char the butt end.

To prevent the feet of horses from balling with snow.

If the frog in the hoof of horses and the fetlock be cleaned, and well rubbed with soft soap, previously to their going out in snowy weather, it will effectually prevent their falling, from what is termed balling the snow.

ART. 16.—*Benefits derived from Steaming Food for Live Stock.—Improved Steaming Apparatus.*—By the EDITOR.

Judging from the limited practice of steaming roots and other fodder for domestic animals, we should suppose the farmers of this country were not sensible of the superior nourishment and great economy of food thus prepared. It may perhaps be considered as a general rule, that when any vegetable undergoes a change in preserving it, some additional change is necessary in order to counteract the former; or that artificial food requires artificial preparation. For instance, Indian corn of one or more years old, becomes too hard for the digestive powers of almost any animal, and consequently requires softening.—Another general rule which farmers should ever bear in mind, is that the various organs of animals are adapted to a *state of nature*, and are liable to become deranged or injured in domesticating them. For instance, it is supposed that in a state of nature, the *molares* or grinders in the upper and lower jaws of horses would present surfaces directly opposed to each other to latest period of the most protracted life; but removed from the moist and tender food of nature to the dry and hard of art, it is found that they have an unnatural wear, producing an oblique inclination inwards, to a degree seriously affecting the condition of old horses.

The digestive powers of animals are various.—Bones and ivory will be dissolved in the stomach of dogs before potatoes, parsnips and other vegetables. On the contrary, the gastric juice of ruminating animals will speedily dissolve vegetables but make no impression on animal substances. The digestive power of the human stomach dissolves both animal and vegetable food.

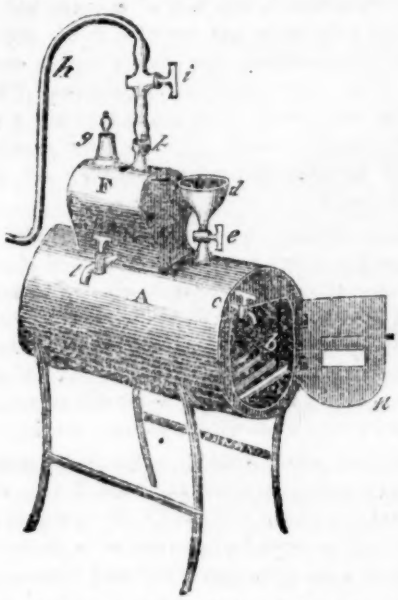
When unbroken kernels of grain are inclosed in tin perforated tubes or balls, and forced into the stomach of fowls having strong gizzards, such as hens, ducks and geese, they will remain unaffected, although the tubes will be bent and bruised. This shows that the dissolvent powers of the gastric juice is ineffective before the food is broken by the mechanical agency of the stomach. Those of less muscular stomachs, such as crows, herons, &c. break with their bills corn and other hard food. If swallowed whole, corn is thrown up or voided unchanged. Man, quadrupeds, fishes and reptiles, possessing thin membranous stomachs, have little or no mechanical power in the stomach, and are consequently dependant on the gastric juice. Hard or unmacerated food entering the stomach is painful to the animal and affords no nourishment.

From the above it will be seen that it is of primary importance to have the food properly prepared before entering the stomach. And it must be apparent to every farmer, that it is more difficult for live stock to macerate dry and hard food than the green and tender grass of the field—and hence the propriety of some artificial means to render the nutriment of winter fodder more available by cattle. Steaming does this more effectually than any other method. The nutritive matter of vegetables are soluble in hot water, and principally consists of five vegetable substances, mucilaginous, saccharine, albuminous, bitter extractive and saline matters. These substances compose those that are dissolved in the stomach; the woody fibre of plants passes off finely broken in the dung.

The advantages of steaming are, economy in food, converting many substances which are now thrown away, into valuable fodder, saving the expense of grinding grain, making the food more palatable and nutritious, and consequently promoting the health and condition of cattle. Among the substances that may very profitably be steamed by farmers are, all kinds of grain, chaff, hay, stalks, straw, cobs, beets, turnips, potatoes and other roots. Hard corn and other grain designed for hogs and old horses, should ever be steamed. Cattle will eat chaff quite readily when fresh from the grain, but when steamed and a little salt dissolved and diffused throughout the mess, it becomes a nourishing and palitable fodder. Hay, particularly old, when treated in the same manner, is greatly benefited. Stalks cut up, steamed, sprinkled with a little bran, and occasionally with salt, become a well relished and ever welcome mess to the cow of sound appetite. Farmers are not all aware of the nutriment contained in the stalks which they suffer to become bleached in their fields by the winter storms. Stalks contain much saccharine matter, the most nourishing of vegetable substances. Straw cut up, mixed and steamed with roots, is an excellent fodder. Cobs contain a great deal of nourishment, and when broken up and steamed, are a valuable feed. Mr. Conn says he has fed a cow for weeks in succession on steamed cobs alone, and found her hair to lie sleek and to exhibit other signs of thrift. From a bushel of corn and cobs ground together, the distillers obtain nearly as much whiskey as from a bushel of corn alone. No vegetable perhaps is more improved by steaming, and more generally useful to the farmer than the potatoe. With chaff or cut straw, they are used as a substitute for hay and grain in feeding horses. Wakefield, of Liverpool, Eng. fed some of his horses on raw and some on steamed potatoes. He soon found that those on the steamed potatoes looked smooth and sleek, and the others rough and poor. Curwen, of England, has placed, by his accurate experiments, the utility and advantage of steamed potatoes beyond all dispute. For hogs and poultry, they are particularly useful.—

Steaming is far better than boiling potatoes, as it makes them more mealy and nutritive.

And now, after having pointed out some of the benefits of steaming food for cattle, the next consideration will be the method and expenses of doing it. The best apparatus which we have seen for the purpose, is that of Mr. S. Conn's portable apparatus, a drawing of which we now present to our readers:



A is a hollow wooden cylinder of about three feet in length and two feet in diameter; into this is put a metalic furnace or stove, for heating the water, with which it is surrounded. There are tubes (*b*) near the bottom of the stove through which the water in the cylinder freely passes. By this arrangement, very little fuel is necessary to raise the water to a degree for generating steam. F serves as a reservoir for the steam, but is not indispensible to the apparatus—*g* is a safety valve; *d* a funnel for pouring in the water; *e* a turn-cock; *c* a cock for ascertaining the height of the water; *b* another for the same purpose; *k* is where the tube *h* is fastened to the reservoir; *i* is a cock for regulating the steam; *n* is the door of the furnace. By inserting the tube (*h*) into the bottom of a barrel, hogshead or other vessel, containing the vegetables to be steamed, the whole apparatus is complete. The best vessel to contain the vegetables, is a tight and strong box, with a lid on the top, and so constructed that one of the sides may be taken out that the contents may be easily removed. A box 5 feet by 4, and 5 feet deep, will contain potatoes sufficient for 50 cows for 24 hours, and they may be steamed in an hour at an expense of fuel too trifling for consideration.

The apparatus may be used for a variety of purposes in domestic economy, particularly for washing clothes.

ART. 17.—Miscellaneous.

Brocoli in the open air.—On the 16th instant, Mr. Wilson presented us with three heads of Brocoli which flowered and ripened in the open air, without artificial protection. They were in fine order, and weighed something less than one pound each.

Maple Sugar of a Refined Quality.—The sugar cane has deservedly acquired high celebrity in the warm latitudes. Its introduction into the southern region of our United States, is considered as an event of great moment in our agricultural system. The extraction of this wholesome and nutritious sweet, from the beet, has for several years exercised the politicians and economists of France. The maple of North America (Acer saccharinum,) is acquiring additional importance; its sap yields a brown sugar capable of high refinement. Mr. Archibald of this city, has in his establishment at Greenwich, upwards of nine hundred loaves of refined sugar from this precious tree. It ought to be introduced into parks and gardens. Improvers of land would merit high commendation by preserving and protecting it. The writer of this paragraph bears full testimony to the excellence of Mr. A's preparation, after even a *single* refining process. S. L. M.

New-York, Jan. 30, 1829.

A Mammoth Turnip.—The Mammoth appears to be the rage in this vicinity. A month ago, we had fossils; yesterday, Mr. John Hugnenin sent to our office, a very fine specimen of the White Norfolk.—It was taken from his farm without regard to selection, weighs 15lbs. 10oz. and measures in circumference 25 1-2 inches. Upon the whole, our region of sand, commonly called the Pine Barren, is peculiarly fitted for this product, and therefore for Sheepwalks; a truth which sooner or later will be realized by the farmers of our State, let others speculate as they may.—*Savannah paper.*

Native Ginger.—A specimen of the growth of the native Ginger, has been left with us by Mr. Raiford, who has raised it successfully for four years past, on common land, and exposed to all the variations of our climate. That in our office, was planted in February last, is now in full vigor and luxuriance, and in a few weeks would ripen. From several experiments made in its culture on a small scale, it might, it is thought, be made a profitable article, considering the demand for it.—*ib.*

Eyes of the Silk Worm.—There are two black convex eyes, one on each side of the head. They are protuberant, and rise above the head rather more than

a hemisphere. To the naked eye, their surface appears to be plain; but, by submitting them to the microscope, their true and admirable structure is ascertained. By the help of this instrument, it is found that the whole surface consists of a multitude of lenses, all separated from one another by an hexagonal or six-sided figure, and placed in the most exact order. Leewenhock counted 35 of these lenses on the fourth part of the sphere of one eye; the entire circumference will therefore contain 140; hence, he says, it follows, that each eye is composed of 3,000 optical organs; but if both parts together constituted a sphere, they then contain 6,236 When the eye is separated and made clear, these hexagons are as transparent as crystal. Leewenhock having properly prepared and fitted an eye to a microscope, could see through it clearly, but the largest objects viewed, were diminished to an incredibly small size. The steeple of the church in Delft, which is 300 feet high and at 750 feet distance, appeared no larger than the point of a needle, seen by the naked eye.

Not huge Behemoth, nor the whale's vast form,
That spouts a torrent, and that breathes a storm,
Transcends in organs apt this puny fly,
Set with ten thousand lenses.—*Evans.*

The construction of these compound eyes is admirably adapted to the convenience of the insect; for, as they are immovable, they would have lost sight of many objects, if their eyes had been framed like those of other animals; but, by their form, they can easily see surrounding objects. As we do not see double with our eyes, so the numerous inlets to sight in an insect, may increase their field of view.

Silk Manufacture in England.—Nearly two millions of pounds weight of raw and thrown silks are annually imported into England; it gives employment to 40,000 hands in throwing it for the weaver, and their wages are *l*350,000. Half a million pounds of soap, and a large proportion of the most costly dye stuffs, are consumed at a further expense of *l*300,000; and *l*265,000 more are paid to winders to prepare it. The number of looms may be taken at 40,000, and the weavers, warpers, mechanics, &c. will employ 80,000 more persons, and their wages will amount to *l*3,000,000. Including infants and dependants, 400,000 mouths will be fed by this manufacture; the amount of which is estimated at *l*10,000,000.—*Report to Parliament*, 1821.

The value of manufactured silk exported in the year 1823, the year before the change of system, was 181,000*l.*; it fell progressively—in 1824, to 159,000*l.*; in 1825, to 150,000*l.*; in 1826 (after the panic,) 106,000*l*; in 1827, it rose to 161,000*l.* just 20,000*l.* short of the year 1823. The increase in the importation of raw silk, entered for home consumption, during the years above referred to, was as follows, taken in pounds, and in round numbers:

1823	(before the change)	*l*2,432,000
1824	(year of the change)	3,993,000
1825	(year of cotton bubble)	3,589,000
1826	(year of universal re-action)	2,244,000
1827	(year of recovery)	4,209,000

Now, compare the quantity entered last year for home consumption, with that of the year before the new law took place, and see what is the difference in pounds avoirdupois, and next in pounds sterling: The increase in pounds of raw silk is above 1,770,000. Taking each pound of raw silk at 16s. will give us, for the increased value of the raw material only, imported for home consumption, above 1,400,000*l.*—*London paper.*

Dutch Pudding.—Cut a round piece out of the bottom of a Dutch loaf, and put that and the piece that was cut out into a quart of cold new milk, in the evening, and let it stand all night. If the milk is all soaked up by the morning, add some more. Put the piece in the bottom again, tie the loaf up in a cloth, and boil it an hour. Eat it with sugar, or with melted butter, white wine, and sugar sauce.

A baked potato pudding.—Mix twelve ounces of potatoes boiled, skimmed, and mashed, 1 oz. of suet, quarter of a pint of milk, and 1 oz. of cheese grated fine; add as much boiling water as is necessary to produce a due consistence, and bake it in an earthen pan.

A substitute for milk and cream.—Beat up the whole of a fresh egg, in a basin, and then pour boiling tea over it gradually, to prevent its curdling. It is difficult from the taste, to distinguish the composition from rich cream.

To cure butter.—Take two parts of the best common salt, one part of sugar, and one part of saltpetre; beat them up and blend the whole together. Take one ounce of this composition, for every 16 ounces of butter, work it well into the mass, and close it up for use. Butter cured this way, appears of a rich marrowy consistence, and fine colour, and never acquires a brittle hardness, nor tastes salt. It may likewise keep good three years, only observing, that it must stand three weeks or a month, before it is used.

Remedy for lameness in horses.—Mr. Sewell, of the Veterinary College, stated his having discovered a method of curing horses, which are lame in the fore-feet. It occurred to him, that this lameness might originate in the nerves of the foot, near the hoof; and in consequence he immediately amputated about an inch of the diseased nerve, taking the usual precautions of guarding the arteries, and passing ligatures, &c. By this means the animal was

instantly relieved from pain, and the lameness perfectly cured.

To cure the thrush in horses' feet.—Simmer over the fire, till it turns brown, equal parts of honey, vinegar and verdigris, and apply it with a feather or brush occasionally to the feet. The horse at the same time should stand hard, and all soft dung and straw be removed.

To fatten poultry.—An experiment has lately been tried of feeding geese with turnips cut in small pieces like dice, but less in size, and put into a trough of water, which has proved effectual.

Malt is an excellent food for geese and turkeys, grains are preferred for the sake of economy, unless for immediate and rapid fattening; the grains should be boiled afresh. Other cheap articles for fattening are oatmeal and treacle; barley-meal and milk; boiled oats and ground malt.

Corn before being given to fowls should always be crushed and soaked in water. The food will thus go further, and it will help digestion. Hens fed thus have been known to lay during the whole of the winter months.

To clean water casks.—Scour the inside well out with water and sand, and afterwards, apply a quantity of charcoal dust; another and better method is, to rinse them with a pretty strong solution of oil of vitriol and water, which will entirely deprive them of their foulness.

Horses.—The following remarks upon horses, are copied from the publication of an eminent farrier in Europe; and we think them worth the perusal of farmers generally.

The pulse of a horse in health, is from 36 to 40 beats in a minute, and may be easily felt by pressing the finger gently upon the temporal artery, which is situated about an inch and a half backwards from the corner of the eye.

Horses have not the faculty of puking, or even belching wind out of their stomachs, and therefore are peculiarly subject to wind cholic.

When a horse has been over-ridden, bloody spots may be seen in the whites of his eyes.

A limber dock is sure evidence of a limber back; that is, a weak one.

A horse that is hardy and good for business, has a short back-bone, which terminates forward of the hip bones.

A decoction of white oak bark will kill botts by tanning them, and they will become shrivelled, as scarcely to be discernable when discharged.

The principal signs of a good horse are these—the eyes set apart in the head, and large and bright; the quirl high in the forehead; one or two on the neck is a good sign; the neck well set on high, the shoulder blades pretty high, and converging to a point; the breast full and large and so also behind, the body round, for flat-bodied or slab-sided horses are weak-natured, the dock stiff, going wide behind, for if the gambols knock together, it shows that the horse is feeble; chewing the bit when provoked, is a good sign.

It is a Spanish proverb, that a dapple grey will sooner die than tire.

Eggs.—A chemist of Geneva states that he has discovered an easy mode for preserving for 6 years, or probably for a longer period, eggs perfectly fresh and fit to eat; and a confectioner of the same place, has, this year, employed in his business, a ton of eggs which had been so preserved. All that is necessary is to put fresh eggs into a bocal (a large round bottle with a short neck) and fill it with lime water.—The way to make the lime water is as follows:—Throw into a vessel containing between twenty and thirty pints of water, five or six pounds of quick lime, shake it well several times, then let the lime precipitate itself, and pour off the water, which is perfectly limpid, although it has dissolved a portion of the lime. This is the water to be used. To make sure of its being saturated with the lime, after having filled the bocal containing the eggs until the water is about 3 inches above them, dust a small quantity of quick lime, and close the bocal.

Mode of growing early Potatoes in the North of Lancashire.—Put the potatoes in a room, or other convenient warm place; about the 2d of February, cover them with a woollen cloth for about 4 weeks, then take it off, and by so doing you will make the sprouts much stronger. Towards the latter end of March set them, covering the sprouts about two inches deep. If the sprouts be about two inches long when set, the potatoes will be ready in 7 or 8 weeks afterwards. A gentleman who had a green-house, adopted the following plan: He placed the potatoes in the green-house in turf mould or peat earth, in the beginning of February, and kept them well moistened with water; he planted them in the open air about the end of March, on a warm border, leaving about half an inch of the points of the sprouts above the ground, and protected them during nights by coverings of mats. By this plan he was able to have new potatoes about the beginning of May. It is considered a very material thing to get the potatoes well sprouted before they are planted.

Good Bread.—An English publication asserts, that a mixture of two parts flour and one of potato, makes an agreeable bread, which cannot be distinguished from wheaten bread. It is said that not less than 300 tons of potatoes are consumed for that purpose every week in London.

NEW-YORK, Jan. 27, 1829.

The Sea Serpent.—SIR, I have to-day conversed with capt. Dixon, of Cape Ann, whose name was attached to the famous story of the Sea Serpent being seen off the eastern point of Cape Ann harbor.—Capt. D. states the whole matter to be a hoax. That in 1821, being in command of the sloop Nancy, bound from Sedgwick to Salem, while passing the eastern point of said harbor, he was called from the cabin by an old pilot, by the name of Flowers, to see the famous Sea Serpent. The old pilot pointed to a little range of rocks covered with sea-weed and barnacles, emerging just above the surface of the water and extending about seventy feet. Now, says the old man, we will give the Salemites a fish story. Here on your compass is a picture of a serpent, with his head of course higher than your decks, and in range with the rocks. Taken altogether, says he, they will make a huge Sea Serpent for the believers in witchcraft. This story was told by the pilot, and capt. D. assented, not dreaming in the least that his name would fly from Maine to Georgia.

Your's, respectfully, B. ROGERS.

Dr. S. L. Mitchill.

Queries.—MR. EDITOR: Is the general practice of sowing only one or two kinds of grass seed in laying down grass land either for pasture or mowing, the best and most natural? Some information from your correspondents on this subject, would be very acceptable to a RUSTICUS EX URBE.

SIR—It has been my intention for two or three years past, to set out a vineyard. I do not wish to incur the expense until I ascertain what kind will succeed best. Can any of your correspondents adduce facts sufficient to make an investment in an imported vine, safe and profitable?

N. York, Jan. 29, 1829. AN AMERICAN.

New Zealand Spinage.—This is a vegetable that appears to possess very valuable qualities. It was introduced here only last spring. It proves extremely productive, so much so, that a few plants of it are sufficient to supply an ordinary family with greens, through the whole summer.

The seed should be planted in hills, three feet apart, in a warm, dry, sheltered situation, two or three seeds in a hill, in good rich soil. The first planting, for a summer supply, may be made about the middle of April; and another for fall use, about the middle of May.

As the fine, rich, succulent leaves of this plant are gathered for use, an abundant succession of buds, shoots, and leaves, are every where produced, all over the plant; and, the more its leaves are used, the more prolific becomes every part of the plant, in the increased sources of its verdant supplies. One great superiority, in point of usefulness, that it possesses over the other kinds of spinage, is, that it yields abundantly throughout the warmest months of the summer season.—*Wilson's Economy.*

Potatoes.—It is estimated that there were 20,863 bushels of potatoes imported into the United States from the British Dominions during the last year. The exportation of American potatoes, only two bushels.

Cucumbers.—The best way to obtain good seed, is to plant a few hills for the purpose, and select for seed such cucumbers as are well shaped and spring within 5 inches of the root. Those which grow near the root will not be so large as those at some distance from it; but the seed will be better and produce fruit sooner. Much of the seed that is planted, is from cucumbers which are allowed to ripen 2, 3, or 4 feet from the root; the first and best being generally picked for the table.

The Russia Cucumber is early, well flavored and productive. They should be planted at some distance from other species, in order to preserve their purity.

Average price of vegetables sold at Washington Market, for January, 1829.

(Corrected by WM. CURR, Gardener, N. York.)

Cauliflower.—The extensive supply of this vegetable which has been brought to market during the past autumn and to this present period, proves the interesting progress our market gardeners are making in its most successful cultivation; very fine heads weighing from two to five pounds, have been sold in this market this month, for 25 to 37 1-2 cents per head. *Brocoli*—The supply of this has also been very plentiful, and in point of size and quality, very little if at all inferior to Cauliflower, from 75 cents to $1 per dozen heads.—*Winter Cabbages* very plentiful, and good heads at 37 1-2 to 50 cents per dozen—*Savoys* 37 1-2 cts. per dozen heads—*Borecole* or *Kale* 37 1-2 cents per dozen—*Potatoes*, the supply unusually deficient, from 50 to 62 1-2 cts. per bushel—*Turnips*, plenty and of good quality, 31 1-4 cts. per bushel—*Parsnips*, $1 per 100—*Blood Beets*, 75 cts. per 100—*Carrots*, 62 1-2 cts. per 100—*Salsify*, from 4 to 6 cts. per bunch of 12 roots—*White Onions*, $1 to 1 25 cts. per bushel; red, 50 cts. per bushel—*Celery*, very plentiful and good, from 4 to 8 cents per bunch of three heads—*Spinage* very plentiful and fine, 31 1-4 cts. per bushel—*Lettuce*, the white Dutch Cabbage and yellow Silesia, fine and plentiful, at 25 to 37 1-2 cts. per dozen heads—*Endive*, the supply rather scarce and inferior in quality, 18 to 25 cts. per dozen—*Water Cresses*, plenty, 18 to 25 cts. per half peck—*Corn Sallad*, do. do.—*Leeks*, plenty and fine, 50 to 62 1-2 cts. per hundred. *Parsley*, 3 cts. per bunch—*Horse Radish*, do. do.